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मानक



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Mazdoor Kisan Shakti Sangathan

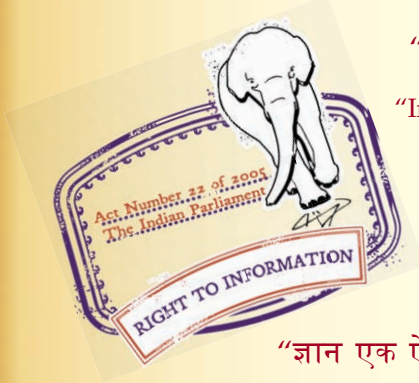
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Jawaharlal Nehru

“Step Out From the Old to the New”

IS 6731 (1977): Locknuts, Narrow Series and Lockwashers with Straight Inner Tab for Rolling Bearings [PGD 32: Cutting tools]



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Satyanarayan Gangaram Pitroda

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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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## Indian Standard

SPECIFICATION FOR  
LOCKNUTS, NARROW SERIES AND LOCKWASHERS WITH  
STRAIGHT INNER TAB FOR ROLLING BEARINGS

( First Revision )

**1. Scope** Covers requirements of locknuts and lockwashers for use with rolling bearings in the size range 10 to 280 mm.

**2. Dimensions and Tolerances** - As given in Table 1 for locknuts and Table 2 for lockwashers.

**3. Material** - Lockwashers shall be made from cold rolled mild steel C10 of IS : 1570-1961 'Schedules for wrought steels for general engineering purposes'.

**4. Mechanical Properties** - Locknuts shall conform to property class 6 as specified in IS : 1367-1967 'Technical supply conditions for threaded fasteners ( first revision )'.

**5. Grade**

**5.1** Locknuts shall conform to Product grade A as specified in IS : 1367 ( Part II )-1977 'Technical supply conditions for threaded steel fasteners: Part II Product grades and tolerances ( second revision )'.

**5.2** Lockwashers shall conform to precision grade as specified in IS : 5369-1975 'General requirements for plain washers and lock washers ( first revision )'.

**6. Designation**

**6.1** A locknut shall be designated by the name, size, pitch of screw thread and the number of this standard.

*Example:*

Locknut of size M10 and 0.75 mm pitch shall be designated as:

Locknut M10 x 0.75, IS : 6731.

**6.2** A lockwasher shall be designated by the name, size and the number of this standard.

*Example:*

Lockwasher of size 70 mm shall be designated as:

Lockwasher 70, IS : 6731.

**7. Sampling** - Sampling procedure for testing and acceptance criteria for locknuts shall be in accordance with IS : 2614-1969 'Methods for sampling of fasteners ( first revision )'.

**8. General Requirements**

**8.1** Locknuts shall be made from round bar stock or seamless tubes ( see Appendix A ).

**8.2** Other requirements for locknuts not covered in this standard shall conform to IS : 1367-1967.

**8.3** Other requirements for lockwashers not covered in this standard shall conform to IS : 5369-1975.

**9. Certification Marking** - Details available with the Bureau of Indian Standards.

**10. Application** - Illustrated in Appendix B.

Adopted 30 May 1977

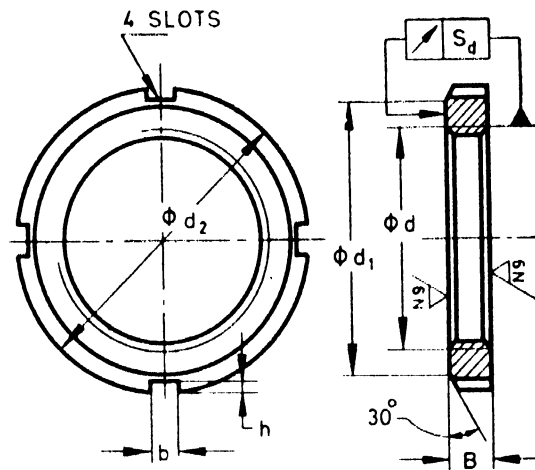
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TABLE 1 DIMENSIONS AND TOLERANCES FOR LOCKNUTS

( Clause 2 )

All dimensions in millimetres.



Nominal Size <i>d</i>	Screw Threads 6H*	<i>d</i> <sub>2</sub> h11	<i>d</i> <sub>1</sub>	<i>B</i> h14	<i>b</i> †	<i>h</i>	<i>S</i> <sub><i>d</i></sub> ‡
10	M10 × 0.75	18	13.5	4	3	2	0.04
12	M12 × 1	22	17	4	3	2	0.04
15	M15 × 1	25	21	5	4	2	0.04
17	M17 × 1	28	24	5	4	2	0.04
20	M20 × 1	32	26	6	4	2	0.04
22	M22 × 1	34	28	6	4	2	0.04
25	M25 × 1.5	38	32	7	5	2	0.04
28	M28 × 1.5	42	36	7	5	2	0.04
30	M30 × 1.5	45	38	7	5	2	0.04
32	M32 × 1.5	48	40	8	5	2	0.04
35	M35 × 1.5	52	44	8	5	2	0.04
40	M40 × 1.5	58	50	9	6	2.5	0.04
45	M45 × 1.5	65	56	10	6	2.5	0.04
50	M50 × 1.5	70	61	11	6	2.5	0.04
55	M55 × 2	75	67	11	7	3	0.05
60	M60 × 2	80	73	11	7	3	0.05
65	M65 × 2	85	79	12	7	3	0.05
70	M70 × 2	92	85	12	8	3.5	0.05
75	M75 × 2	98	90	13	8	3.5	0.05
80	M80 × 2	105	95	15	8	3.5	0.05
85	M85 × 2	110	102	16	8	3.5	0.05
90	M90 × 2	120	108	16	10	4	0.05
95	M95 × 2	125	113	17	10	4	0.05
100	M100 × 2	130	120	18	10	4	0.05
105	M105 × 2	140	126	18	12	5	0.05
110	M110 × 2	145	133	19	12	5	0.05
115	M115 × 2	150	137	19	12	5	0.05

\*See IS : 4218 'ISO metric screw threads'.

†Actual single width must be  $\geq b$ .

‡Measurement taken at a radius  $= \frac{d + d_1}{4}$ .

( Continued )

**AMENDMENT NO. 1      DECEMBER 1980**  
**TO**  
**IS : 6731-1977 SPECIFICATION FOR LOCKNUTS,**  
**NARROW SERIES AND LOCKWASHERS**  
**WITH STRAIGHT INNER TAB FOR**  
**ROLLING BEARINGS**

*( First Revision )*

**Alterations**

*( Pages 2 and 3, Table 1, foot-note with ‘ \* ’ mark )* — Substitute the following for the existing foot-note at both the places:

‘ \*Screw thread tolerances for machine tools applications shall be 5H ( see IS : 4218 ISO metric screw threads ). ’

*( Page 4, Table 2, last column, ninth entry )* — Substitute ‘17’ for ‘13’.

( EDC 39 )

Printed at Simco Printing Press, Delhi, India

**TABLE 1 DIMENSIONS AND TOLERANCES FOR LOCKNUTS — Contd**

Nominal Size $d$	Screw Threads $6H^*$	$d_2$ h11	$d_1$	$B$ h14	$b$ †	$h$	$S_d$ ‡
120	M120 × 2	155	138	20	12	5	0.05
125	M125 × 2	160	148	21	12	5	0.06
130	M130 × 2	165	149	21	12	5	0.06
135	M135 × 2	175	160	22	14	6	0.06
140	M140 × 2	180	160	22	14	6	0.06
145	M145 × 2	190	171	24	14	6	0.06
150	M150 × 2	195	171	24	14	6	0.06
155	M155 × 3	200	182	25	16	7	0.06
160	M160 × 3	210	182	25	16	7	0.06
165	M165 × 3	210	193	26	16	7	0.06
170	M170 × 3	220	193	26	16	7	0.06
180	M180 × 3	230	203	27	18	8	0.06
190	M190 × 3	240	214	28	18	8	0.06
200	M200 × 3	250	226	29	18	8	0.06
220	Tr220 × 4	280	250	32	20	10	0.06
240	Tr240 × 4	300	270	34	20	10	0.06
260	Tr260 × 4	330	300	36	24	12	0.07
280	Tr280 × 4	350	320	38	24	12	0.07

\*See IS : 4218 'ISO metric screw threads'.

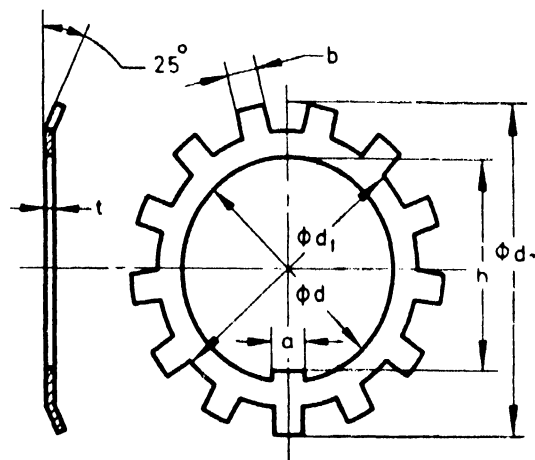
†Actual single width must be  $\geq b$ .

‡Measurement taken at a radius =  $\frac{d + d_1}{4}$ .

**TABLE 2 DIMENSIONS AND TOLERANCES FOR LOCKWASHERS**

( Clause 2 )

All dimensions in millimetres.



Nominal Size $d$ C11	$d_1$	$d_2$ ≈	$a^*$	$h$ C11	$b$ †	$t$ ‡ ≈	$N$ §
10	13.5	21	3	8.5	3	1	9
12	17	25	3	10.5	3	1	11
15	21	28	4	13.5	4	1	11
17	24	32	4	15.5	4	1	11
20	26	36	4	18.5	4	1	11
22	28	38	4	20.5	4	1	11

\*Actual single width must be  $\leq a$ .

†Actual single width must be  $\leq b$ .

‡The thickness is approximate only, and small variations are permissible.

§ $N$  = Minimum number of outer tabs; since the nuts have four slots,  $N$  must be an odd number.

( Continued )

TABLE 2 DIMENSIONS AND TOLERANCES FOR LOCKWASHERS — *Contd*

Nominal Size $d$ C11	$d_1$	$d_2$ $\approx$	$a^*$	$h$ C11	$b^\dagger$	$t^\ddagger$ $\approx$	$N^\S$
25	32	42	5	23	5	1.25	13
28	36	46	5	26	5	1.25	13
30	38	49	5	27.5	5	1.25	13
32	40	52	5	29.5	5	1.25	13
35	44	57	6	32.5	5	1.25	13
40	50	62	6	37.5	6	1.25	13
45	56	69	6	42.5	6	1.25	13
50	61	74	6	47.5	6	1.25	13
55	67	81	8	52.5	7	1.5	13
60	73	86	8	57.5	7	1.5	17
65	79	92	8	62.5	7	1.5	17
70	85	98	8	66.5	8	1.5	17
75	90	104	8	71.5	8	1.5	17
80	95	112	10	76.5	8	1.8	17
85	102	119	10	81.5	8	1.8	17
90	108	126	10	86.5	10	1.8	17
95	113	133	10	91.5	10	1.8	17
100	120	142	12	96.5	10	1.8	17
105	126	145	12	100.5	12	1.8	17
110	133	154	12	105.5	12	1.8	17
115	137	159	12	110.5	12	2	17
120	138	164	14	115	12	2	17
125	148	170	14	120	12	2	17
130	149	175	14	125	12	2	17
135	160	185	14	130	14	2	17
140	160	192	16	135	14	2	17
145	171	202	16	140	14	2	17
150	171	205	16	145	14	2	17
155	182	212	16	147.5	16	2.5	19
160	182	217	18	154	16	2.5	19
165	193	222	18	157.5	16	2.5	19
170	193	232	18	164	16	2.5	19
180	203	242	20	174	18	2.5	19
190	214	252	20	184	18	2.5	19
200	225	262	20	194	18	2.5	19
220	250	296	24	213	20	3	19
240	270	312	24	233	20	3	19
260	300	342	28	253	24	3	19
280	320	362	28	273	24	3	19

\*Actual single width must be  $\leq a$ .†Actual single width must be  $\leq b$ .

‡The thickness is approximate only, and small variations are permissible.

§N — Minimum number of outer tabs; since the nuts have four slots, N must be an odd number.

¶Sizes for trapezoidal threads for 'd' from 220 to 280 mm.



**APPENDIX A**

( Clause 8.1 )

**SUITABLE MATERIALS FOR LOCKNUTS**

**A-1.** The following materials suggested for locknuts are for guidance only:

C20 and C30 of IS : 2073-1970 'Specification for carbon steel black bars for production of machined parts for general engineering purposes ( *first revision* )'.

or

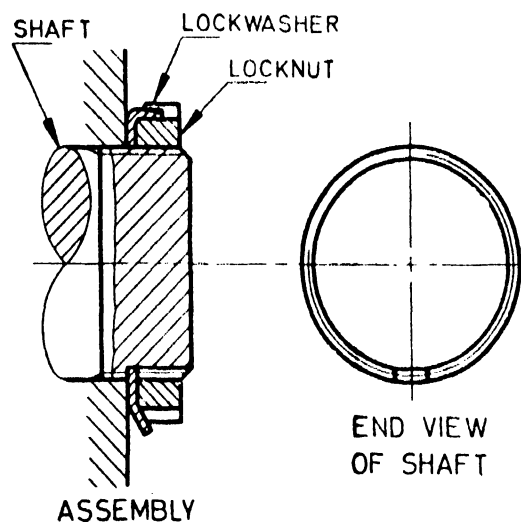
Class 2 and Class 3 of IS : 1875-1970 'Specification for carbon steel billets, blooms, slabs and bars for forgings ( *third revision* )'.

or

SG 500/7 of IS : 1865-1974 'Specification for iron casting with spheroidal or modular graphite ( *first revision* )'.

**APPENDIX B**

( Clause 10 )

**APPLICATION****EXPLANATORY NOTE**

The requirements of locknuts were first published in IS : 6731-1972 'Specification for slotted round nuts'. The present revision has been necessitated due to the publication of ISO 2982-1972 'Rolling bearings — Locknuts, narrow series and lockwashers with straight inner tab' and to include the requirements of lockwashers which are used in conjunction with locknuts in rolling bearings. In the present revision, reference to hardened and unhardened nuts has been deleted and sizes greater than 200 mm with trapezoidal threads have been included. Illustration of application is given in Appendix B.

This standard conforms to ISO 2982-1972 issued by International Organization for Standardization (ISO).